

REMARKS

Claims 1-8 and 10-21 remain pending in the above-referenced application.

Regarding the Section 112 rejection, Applicants submit that the claim language regarded as indefinite by the Examiner are actually clear and definite to one of ordinary skill in the art. The Examiner is reminded that claim language is not to be read in a vacuum, as the Examiner has done here, but in view of the specification. When read properly, one of ordinary skill in the art could discern a clear and definite claim scope.

As for the prior art rejection, the etching method using a plasma according to independent claim 1 provides specifically not to inject high-frequency power into the etching body via the substrate electrode, and, to be sure, exactly when at least approximately ambipolar plasma is present. By contrast, neither in Grünwald nor in O'Neill is it provided not to inject high-frequency power into the etching body via the substrate electrode when at least approximately ambipolar plasma is present. Rather, in Grünwald, it is only described that the unipolar pulsed voltage at the substrate electrode is provided for a predetermined time period (see Abstract or column 3, lines 26-32). That is, it does not give any hints that ending of the pulsed substrate electrode voltage is to take place upon a certain condition, especially the condition when at least approximately ambipolar plasma is present. On this topic, any hint whatsoever is also missing in O'Neill.

With regard to independent claim 4, the Examiner refers to the documents of Grünwald, O'Neill and Koshimizu. However, at no place in the Office Action does the Examiner go into the features of claim 4, especially not the feature of claim 4, namely, that there exists a fixed, whole-numbered phase ratio between the two first and second pulse trains. In the documents cited by the Examiner, at least this feature is neither described nor made obvious.

With regard to independent claim 7, the Examiner refers to the documents of Grünwald and O'Neill. As has already been established, in the teaching of Grünwald, a unipolar pulsed voltage is provided at the substrate electrode for a predetermined time period (see Abstract or column 3, lines 26-32). It is not known, however, that the phase of the pulsed voltage at the substrate electrode is itself low-frequency modulated. Exactly this, however, is required in Claim 7. Compare on this, e.g. Figure 7 of our Application: Because the phase of the pulsed voltage at the substrate electrode is itself low-frequency modulated, there are time phases of substrate bias pulse (number 30) and between them the substrate bias pause (number 31).

With regard to independent claim 11, the Examiner refers to the documents of Grünwald, O'Neill and Koshimizu. The etching method according to claim 11 provides adding inert gas to the plasma, and, to be sure, exactly when at least approximately ambipolar plasma is present. By contrast, in Koshimizu it is described that first an inert gas is introduced into the etching chamber, and subsequently a plasma is ignited (column 14, lines 29-49). In other words: Based on this teaching, it is not made obvious to one skilled in the art that he should add an inert gas to the plasma when a special state of the plasma arises, namely, when the plasma becomes ambipolar.

With regard to independent claim 16, the Examiner refers to the documents of Grünwald, O'Neill and Hashimoto. However, it cannot be inferred from the places in Hashimoto cited in the Office Action that a non-integral multiple of the frequency of the low-frequency modulation of the high-frequency power is being set as the plasma pulse frequency, as is required in claim 16. It is also pointed out that, in addition, in Claim 16 not any synchronization is provided of the two modulations named, but that the two modulations are synchronized with each other in such a way that into one pulse injected via the substrate electrode into the substrate, there go in each case n plasma pulses ($n=1,2,3,\dots$), however, $n+1$ plasma pulses occurring during a pause of an energy injection into the substrate.

In summary, we continue to regard all our independent Claims 1, 4, 7, 11 and 16 as being novel and based on inventive activity, so please respond to the Office Action corresponding to our comments.

It is respectfully submitted that the subject matter of the present application is new, non-obvious, and useful. Prompt consideration and allowance of the application are respectfully requested.

Respectfully submitted,

KENYON & KENYON LLP

Bn: LS 13(No 4)0722

Dated: 11/21/06

By: Gerard A. Messina
Reg. No. 35,952

One Broadway
New York, NY 10004
(212) 425-7200